THE SURGICAL SIGNIFICANCE OF THE ACCESSORY PANCREAS.

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AN accessory pancreas is probably not an excessively rare abnormality. In spite of the fact that it would readily be overlooked in anatomical or post-mortem subjects, in which softening and putrefactive changes in the walls of the bowel would soon alter its appearance, at least 39 cases were on record in 1908.[1] It was first described by Klob in 1859; Zenker [2] two years later was able to give an account of seven cases. An excellent summary of the anatomical literature on the subject is given by Ruediger.[3]

The accessory pancreas is a small, rounded nodule, which may be as large as a filbert, situated somewhere in the wall of the alimentary canal, though there is one case on record in which it was found to lie close to the umbilicus in the abdominal wall. More commonly, it is situated: (1) *in the wall of the stomach,* either near the pylorus, or the greater or lesser curvature; (2) *in the wall of the duodenum,* but detached from the true pancreas; (3) *in the first eight inches of the jejunum;* this is the commonest location, and both our cases fall into this class; (4) *in the lower jejunum or ileum.* In several instances it has been found near the ileocæcal valve.

In some cases it has been covered by a normal mucous membrane and serous coat; in others no villi have been present over it but it has bulged into the lumen of the bowel, as in the case figured.

Histologically, it shows typical pancreatic structure and well-defined ducts.

Up to the present, the surgical significance of the accessory pancreas has appeared to be very small. Ruediger was unable to collect any very definite evidence that it gave rise to symptoms. This view must now be subject to modification.

The accessory pancreas may give trouble in four ways:

1. *It may produce mechanical alterations in the walls of the alimentary canal.* Several cases are recorded in which it formed a complete ring around the duodenum with some narrowing, but in none do symptoms appear to have arisen. Similarly, it has exerted traction on the wall of the bowel and produced diverticula.

Cecchini[4] in 1886 published a case of gastroptosis apparently due to an accessory pancreas, but we have been unable to consult his pamphlet.

2. *The accessory pancreas is liable to acute pancreatitis.* Such a case occurred recently in the practice of one of us (A. R. S.), producing extreme inflammation of the wall of the surrounding jejunum and symptoms of a high acute intestinal obstruction. A careful search through the literature (including a large number of monographs, and the *Index Medicus* back as far as 1886) has failed to discover any similar record.

CASE I.—F. R., a girl aged twelve, was sent into Cossham Hospital with a history of vomiting for four days. Dr. Llewellyn, who sent her in, states that there had been no previous illness. The vomiting had become more and more frequent, though there was but little pain. She had had some diarrhœa. At first, a large quantity of "slime" was passed; on the second day a formed motion, and on the third half a pint of blood.

On examination in the hospital, she was a well-nourished girl; the facies was not drawn and anxious as in peritonitis. The pulse was about 80, but small; the temperature was 97.6°. The vomiting was now every ten minutes, consisting of bilious stuff, not fecal. The abdomen was nowhere distended, moved on

respiration, was not rigid, and did not show peristalsis. Nothing abnormal could be felt; there was a little pain and tenderness in the upper abdomen. Examination of the chest, rectum, and hernial orifices revealed nothing. The urine contained no albumin or sugar but was full of acetone and diacetic acid. While she was being examined she had a typical attack of tetany.

A provisional diagnosis was made of high intestinal obstruction or possibly mesenteric thrombosis, and immediate operation performed with the patient lying on her side to avoid calamities from the incessant vomiting. Open ether was given, and as a matter of fact very little vomiting occurred. An incision was made in the upper abdomen. The stomach was rather distended. The pancreas was examined through a hole between the stomach and colon; the tail could not be found. There was no fat necrosis (it was specially looked for). The first six inches of the jejunum, beyond the duodenojejunal flexure, was bright scarlet in color and the wall was more than half an inch thick, gradually fading off distally into normal jejunum. The mesenteric vessels were not blocked. About one and one-half inches from the duodenojejunal flexure, in the wall of the jejunum, was a white nodule projecting slightly under the serous coat. It was about half an inch in diameter and nearly escaped observation. It projected slightly into the lumen of the bowel. There was no peritonitis or lymph-clot.

As the inflammatory swelling involved the duodenum as well, it was judged impossible to resect the affected loop. The little tumor was cut out and the bowel sewn up longitudinally. Unfortunately the wall was so thick that this left but little lumen, and posterior gastrojejunostomy, of necessity with a loop to avoid the inflamed area, had to be performed. The nodule was excised on the supposition that it might be a sarcoma or myoma; in any case it was evidently the source of infection.

After-history.—The vomiting was considerably relieved for two days; but the temperature rose. There was no sign of peritonitis, but she died about 50 hours after the operation. No autopsy was allowed.

The excised nodule proved to be an accessory pancreas in a state of acute necrosis, many of the cell nuclei being clouded or lost. There was no leucocytic infiltration. There were no

villi over the tumor, which projected slightly even in the swollen condition of the bowel wall. The ducts could be plainly seen, but they were not specially affected. The muscle fibres of the neighboring intestine had lost nearly all their nuclei and were infiltrated with leucocytes, in a condition of inflammatory necrosis; the neighboring villi were normal.

It would appear probable that in this case the exposed nodule of accessory pancreas became infected from the jejunum; acute pancreatitis supervened and excited acute inflammation of the muscular coat of the surrounding jejunum to such a degree as to produce considerable obstruction, incessant vomiting, slimy diarrhœa and melæna.

3. *Accessory pancreas may develop chronic interstitial pancreatitis.* Mayo Robson [5] has reported such a case.

The patient, a middle-aged man, was suffering from chronic obstructive jaundice without pain, and the Cammidge crystals indicated pancreatitis. On exploration, there was chronic cirrhosis of the head of the pancreas, and an accessory nodule in the wall of the duodenum also affected with cirrhosis. This was excised on the assumption that it might possibly be malignant. A cholecystenterostomy was performed and the patient recovered.

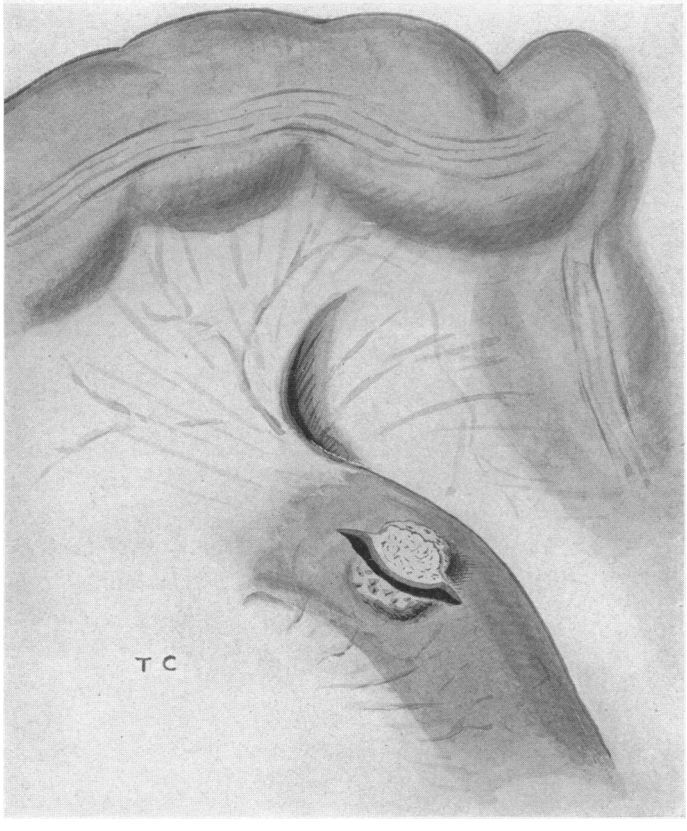
4. *Accessory pancreas may complicate the diagnosis of the cause of abdominal symptoms.* This was so in the following case treated by one of us (T. C.) in 1908.

CASE II.—E. D., male, aged fifty-five, was admitted to the Bristol Royal Infirmary complaining of vomiting and loss of weight. He had suffered from "urging" for a year, and periodical attacks of vomiting, up to about a pint at a time. He had lost two stone in three months. There was not much pain.

On examination, he was emaciated, and the sclerotics slightly yellow. The pulse was 62, small and soft. The abdomen was not distended; a small doubtful lump was felt in the epigastrium; the stomach, inflated with CO_2, was not dilated. The gastric contents showed yeasts, a trace of lactic acid, and no free HCl.

On abdominal exploration, a small doubtful scar with surrounding infiltration was found on the pylorus. The stomach was not enlarged. The gall-bladder was very full of bile, with no

FIG. 1.



Accessory pancreas in the jejunum excised during operation of posterior gastro-jejunostomy (represented as bisected into the bowel).

stones, although it could not be emptied by pressure. The pancreas was not indurated, but hard glands were felt near the bile-duct. In the wall of the jejunum, two inches from the duodeno-jejunal flexure, was a small, soft nodule about the size of a filbert. (Fig. 1.) As nothing else very definite was discovered, this was excised and a no-loop gastrojejunostomy performed through the gap. The gall-bladder was drained.

The excised nodule proved on microscopical examination to be an accessory pancreas.

After-history.—The patient recovered at the time and lost his icteric tinge, but he continued to lose weight, and after returning home he wasted exceedingly, suffered from pain and vomiting, and died in about seven months.

We do not suggest that the accessory pancreas had anything to do with this patient's symptoms. He was probably suffering from malignant disease of the pylorus, although it was regarded as inflammatory at the time of operation. But it is easy to believe that in doubtful exploratory laparotomies the discovery of a tumor in the bowel wall may be very misleading if the surgeon does not recollect the existence of such an abnormality as the accessory pancreas. If such should occur at the usual site for gastro-enterostomy, as in this case, it is conveniently situated for excision.

REFERENCES.

[1] Robson, Mayo: Brit. Med. Jour., 1908, i, p. 1155.
[2] Zenker: Virchow's Archives, 1861, xxi, p. 369.
[3] Ruediger: Journ. Amer. Med. Assoc., Chicago, 1903, xl, p. 1059.
[4] Cecchini: Ectopia of the Head of the Pancreas Causing Gastroptosis, Modena, 1886.
[5] Robson, Mayo: Lancet, 1905, ii, p. 1823.